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Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

M.Tech. (First Semester – Regular/Supplementary) Examinations, January – 2026

24MBTPC11001 – Advanced Biochemistry and Molecular Biology (Biotechnology)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right-hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What is isomerism?	CO1	K1
b. Define anomers with example.	CO2	K2
c. What is the end product of fatty acid oxidation?	CO3	K1
d. Differentiate between Polycistronic and Monocistronic DNA.	CO4	K2
e. Draw the structure of prokaryotic ribosome.	CO5	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Discuss the structure and functions of Glycogen.	5	CO1	K1
b. Explain the structure and functions of any two polysaccharides which is used for the formation of cell wall.	5	CO1	K1
(OR)			
c. What is Nucleic acid? Discuss the structure and features of DNA proposed by Watson and Crick.	10	CO1	K2
3.a. Explain the steps involved in glycolysis.	10	CO2	K1
(OR)			
b. Write a note on Oxidative phosphorylation.	5	CO2	K2
c. Explain the steps of gluconeogenesis?	5	CO2	K2
4.a. Elaborate Hershey and Chase's Experiment.	5	CO3	K2
b. Discuss the structure of gene in eukaryotes.	5	CO3	K1
(OR)			
c. Explain the steps involved in Eukaryortic DNA replication.	10	CO3	K3
5.a. Discuss the role of Transcription factor in transcription.	5	CO4	K1
b. Write the mechanism of replication at telomere.	5	CO4	K1
(OR)			
c. Discuss the process of DNA transcription in prokaryotes.	10	CO5	K2
6.a. Explain the process of DNA translation in prokaryotes.	10	CO5	K2
(OR)			
b. What happens to lac operon in the presence and absence of inducer? Discuss briefly.	5	CO6	K1
c. Write about the types and characteristics of transposable element.	5	CO6	K2

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